

### Abstract

With respect to two pattern sets obtained on different conditions, a feature-extraction matrix, which maximizes between-class scatter and minimizes within-class scatter, is found respectively. A first feature amount is  
5 calculated using one of the feature-extraction matrices. The first feature amount and the two matrices are retained in a referential database. A pattern is determined to a second feature amount — extracted by applying another feature-extraction matrix to a pattern input — by extracting a most similar element out of the first feature amount retained in the referential database.

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